The following is a complete listing of all claims in the application, with an indication of the status of each:

Listing of claims:

1-32. (Cancelled)

33. (Currently amended) A method for detecting activation of lymphocytes comprising the steps of:

a) incubating a sample containing a mixed population of cell types including a plurality of subsets of lymphocytes where each subset includes lymphocytes with characteristic determinants that distinguish one subset from another, with an inducing agent selected from the group consisting of mitogens and antigens; then

b) separating a selected subset of lymphocytes from said sample by:

i) contacting said sample with a solid support having a specific binding substance, said specific binding substance being specific for at least one characteristic determinant of said selected subset of lymphocytes, and said contacting step resulting in the formation of a complex of cells, binding substance and solid support; and

ii) separating said complex from a remainder of said sample; then

c) lysing lymphocytes in said selected subset to release an activation-correlated intracellular component selected from the group consisting of ATP, NADP, and PCNA; then

d) measuring a level of said activation-correlated intracellular component released from said lymphocytes and a level of said activation-correlated intracellular component in a control sample; and

e) determining activation of lymphocytes for said selected subset of lymphocytes from said level of said activation-correlated intracellular component measured in said measuring step, wherein said lymphocytes are activated if said level of said activation-correlated intracellular

component is increased compared to said level of said activation-correlated intracellular component in said control sample.

~~wherein said step of separating comprises the steps of contacting said sample with a solid support having a specific binding substance, said specific binding substance being specific for at least one characteristic determinant of said selected subset of lymphocytes, said contacting step resulting in the formation of a complex of cells, binding substance and solid support; and removing said complex from a remainder of said sample; or~~

~~wherein said inducing agent is selected from the group consisting of drugs, organic chemicals, inorganic chemicals, metals, tumor cell proteins, and proteins derived from transplanted organisms; or~~

~~wherein said subset of lymphocytes is selected from the group consisting of T lymphocytes, helper T lymphocytes, natural killer T lymphocytes, and cytotoxic T lymphocytes; or~~

~~wherein said intracellular component is ATP, and further comprising the steps of determining a level of ATP in a control sample and comparing said level of ATP in said control sample to said level of ATP identified in said detecting step.~~

34. (Cancelled)

35. (Currently amended) A method as in claim ~~34~~ 33 where said antigen is a virus or a bacteria or a subcomponent thereof selected from the group consisting of O fever cells, PPD, tetanus toxoid, OSPA, OSPB, OSPC, gp 120 protein, and peptides derived from gp 120.

36. (Currently amended) A method according to claim 33 wherein said inducing agent is selected from the group consisting of drugs, organic chemicals, inorganic chemicals, metals, tumor cell proteins, and proteins ~~derived~~ from transplanted ~~organisms~~ organs.

37. (Previously presented) A method according to claim 33 wherein said subset of lymphocytes is selected from the group consisting of T lymphocytes, helper T lymphocytes, natural killer T lymphocytes, and cytotoxic T lymphocytes.

38. (Currently amended) A method according to claim ~~34~~ 33 wherein said characteristic determinant is a characteristic determinant of T cells and is selected from the group consisting of a functional marker, a marker of a particular differentiation stage, and an activation marker.

39. (Currently amended) A method according to claim ~~34~~ 33 , wherein said solid support comprises magnetic or paramagnetic material.

40. (Previously presented) A method as recited in claim 39 wherein the step of separating said complex is performed by magnetic separation.

41. (Currently amended) A method according to claim ~~34~~ 33 , wherein said solid support comprises polystyrene.

42. (Currently amended) A method according to claim ~~34~~ 33 wherein said detecting step includes the step of adding luciferin to said intracellular component released from said lymphocytes in said subset of lymphocytes.

43. (Currently amended) A method according to claim ~~34~~ 33 , wherein the said specific binding substance is an antibody.

44. (Currently amended) A method according to claim ~~34~~ 33 , wherein said specific binding substance is a cytokine.

45. (Currently amended) A method according to claim 33 wherein said intracellular component is ATP~~, and further comprising the steps of determining a level of ATP in a control sample and comparing the level of ATP in the control sample to the level of ATP identified in said detecting step~~.

46. (Currently amended) A method according to claim 45 wherein said control sample ~~is~~ comprises liposomes containing ATP.

47. (Cancelled)